WHAT IS CLAIMED IS:

1. A method of forming sets of code symbols out of a series of sets of code symbols for use in a systematic iteratively decoded code, comprising:

forming a first set of code symbols by forming a number of code symbols from a first set of data symbols and forming a second number of code symbols using the first set of data symbols and previously formed code symbols, with at least some of the second number of code symbols being formed using code symbols using a previously formed set of code symbols.

2. The method of claim 1 further comprising:

forming a second set of code symbols by forming a further second number of code symbols from a second set of data symbols and forming further second number of code symbols using the second set of data symbols and previously formed code symbols, with at least some of the further second number of code symbols being formed using at least some of the second number of code symbols.

3. The method of claim 2 wherein the data symbols and code symbols are bits.

4. The method of claim 3 wherein the code is a low density parity check (LDPC) code.

5. The method of claim 4 wherein the second number of code symbols are formed by selectively XORing a combination of first data symbols and previously formed code symbols.

6. The method of claim 5 wherein the further second number of code symbols are formed by selectively XORing a combination

of second data symbols and previously formed code symbols, at least some of the previously formed code symbols being code symbols from the second set of code symbols.

7. A method of forming code bits for use in a system employing a linked low density parity check code, comprising:

receiving a data stream comprising data bits $d_1..d_{1a}, d_2...d_{2a}...d_y...d_{ya}...d_x...d_{xa}...$;

forming a code stream comprising code bits $c_1..c_{1a}...c_{1b}, c_2...c_{2a}...c_{2b}...c_y...c_{ya}, c_{ya+1}...c_{yb}....c_x...c_{xa}, c_{xa+1}...c_{xb}...$, with $c_x...c_{xa}$ being $d_x...d_{xa}$ and at least some of the bits $c_{xa+1}...c_{xb}$ being an XOR combination of prior bits including at least some of the bits $c_{ya+1}...c_{yb}$.

8. A method of forming code words comprising:

receiving a first set of data symbols;

forming a first set of code symbols;

receiving a second set of data symbols;

forming a second set of code symbols, the second set of code symbols comprising a selective XOR combination of the first set of code symbols, and the second set of data symbols;

receiving a third set of data symbols; and

forming a third set of code symbols, the third set of code symbols comprising a selective XOR combination of the second set of code symbols and the third set of data symbols.

9. A method of decoding transmitted bits to recover a data signal, the method comprising:

receiving a stream of transmitted bits, the transmitted bits being encoded in accordance with an extended low density parity check matrix, the extended low density parity check matrix having an extended portion

formed of a plurality of blocks of an original low density parity check matrix;

iteratively decoding the transmitted bits.

10. A forward error correction system using iteratively decoded codes, the system comprising:

an encoder, the encoder encoding information symbols to form code symbols, the code symbols comprising sets of code symbols, a current set of code symbols comprising a number of code symbols formed of information symbols and a number of code symbols formed using information symbols, code symbols of a previous set of code symbols, and previously formed code symbols of a current set of code symbols;

a decoder, the decoder iteratively decoding the code symbols.

11. The system of claim 10 wherein the number of code symbols formed using information symbols, code symbols of a previous set of code symbols, and previously formed code symbols of a current set of code symbols is formed using an XOR operation.

12. The system of claim 11 wherein the XOR operation is accomplished in accordance with a linked low density parity check (LDPC) code.

13. The system of claim 12 wherein the linked LDPC code is formed by extending a portion of an original LDPC matrix.

14. The system of claim 13 wherein the portion of the original LDPC matrix comprises a base portion, an upper extending portion, and a sideways extending portion.

15 The system of claim 14 wherein the base portion, the upper extending portion, and the sideways extending portion contain an equal number of elements.